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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/602,278  
Filing Date: June 23, 2000  
Appellant(s): BRUNHEROTO ET AL.

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Brunheroto et al  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed February 13, 2008 appealing from the Office action mailed May 15, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,319,453	COPRIVIZA ET AL	6-1994
5,826,165	ECHEITA ET AL	10-1998
6,597,405	IGGULDEN	7-2003

### **(9) Grounds of Rejection**

The following grounds of rejection are applicable to the appealed claims:

Claims 30-32, 35-42, and 45-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza et al. (5,319,453) [Copriviza] in view of Echeita et al. (5,826,165) [Echeita].

Regarding claims 30 and 40, Copriviza discloses a system for monitoring quality of service of play out of a video program (col. 3, lines 50-55), the system comprising:

a program source to encode each frame of the video program with a first unique signature that identifies the frame as being associated with the video program (col. 8, lines 16-39); and

the play-out device to compute statistics associated with play-out of the video program (col. 10, lines 35-54).

Copriviza fails to disclose the video program is digital, the program source creates a meta-stream for the digital video program, the meta-stream including a play-out schedule for the digital video program and a length of the digital video program and a prior to play-out of the digital video program, transmit the meta-stream to a play-out device, the play-out device including a signature engine to generate a second unique signature for each frame of the digital video program being played out and a matching engine to compare the second unique signature generated for each frame with a corresponding first unique signature encoded with the frame, compare a time of the play-out of the digital video program with a

time specified in the play-out schedule, and compare an actual duration of the play-out of the digital video program with the length of the digital video program specified in the meta-stream.

In an analogous art, Echeita teaches a system which automatically monitors the quality of service digital video material (col. 4 line 66 – col. 5 line 4) by creating an associated meta-stream that includes a play-out schedule for the digital video program and a length of the digital video program and a prior to play-out of the digital video program, and transmitting the meta-stream to a play-out device (col. 5, lines 4-14), the meta-stream and the digital video program being linked by identifying signature data found in both the digital video program and the meta-stream (common information found in the headers, or “overhead” information, col. 7, lines 37-43), and utilizing the meta-stream in the program play-out device to determine play-out statistics of the program, including play-out time and duration by automatically comparing the measured values versus expected values (col. 8, lines 9-65 and col. 10, lines 42-59), providing the benefit of a system of reduced complexity for monitoring quality of service of video programming (col. 4, lines 53-66).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Copriviza to include the video program is digital, the program source creates a meta-stream for the digital video program, the meta-stream including a play-out schedule for the digital video program and a length of the digital video program and a prior to play-out of the digital video

program, transmit the meta-stream to a play-out device, the play-out device including a signature engine to generate a second unique signature for each frame of the digital video program being played out and a matching engine to compare the second unique signature generated for each frame with a corresponding first unique signature encoded with the frame, compare a time of the play-out of the digital video program with a time specified in the play-out schedule, and compare an actual duration of the play-out of the digital video program with the length of the digital video program [specified in the meta-stream], as taught by Echeita, providing the benefit of a system of reduced complexity for monitoring quality of service of video programming. The system of Echeita extracts [generates] a second unique signature for each frame of the digital video program being played out and compares the second unique signature generated for each frame with a corresponding first unique signature encoded with the frame in the section which aligns the overhead information found the "advertisement reconciliation data" with the header information found in the programming itself, where the signatures taught by Copriviza serve the function of identifying frames when modified in view of Echeita.

Regarding claims 31 and 41, Copriviza and Echeita disclose the system and method of claims 30 and 40, wherein the play-out device includes a non-volatile local storage to store the computed statistics (Copriviza, col. 10 lines 49-54).

Regarding claims 32 and 42, Copriviza and Echeita disclose the system and method of claims 31 and 41, wherein the play-out device is operable to run a quality of service application for automatically analyzing the computed statistics (Echeita, col. 10, lines 49-59).

Regarding claims 35 and 45, Copriviza and Echeita disclose the system and method of claims 30 and 40, wherein the program source transmits the meta-stream to a play-out device using an encryption algorithm (Echeita, col. 6, lines 30-62).

Regarding claims 36 and 46, Copriviza and Echeita disclose the system and method of claims 30 and 40, but fail to disclose the digital video program is distributed to the play-out device from the program source in accordance with MPEG-2 compression.

Examiner takes official notice that the use of MPEG-2 compression is notoriously well known in the art as a form of digital video compression.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system and method of Copriviza and Echeita to utilize MPEG-2 compression, an industry standard form of digital video compression.

Regarding claims 37 and 47, Copriviza and Echeita disclose the system and method of claims 30 and 40, but fail to disclose the program source places the unique first signature associated with a given frame of the digital video program into video image side bands of the frame.

Examiner takes official notice that placing information into video image side bands is notoriously well known in the art, as said placement puts the data in a place where there is no chance of distorting or otherwise interfering with the main video image.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system and method disclosed by Copriviza and Echeita to include placing the unique first signature in the video image side bands of the frame, for the benefit of placing the signature in a video frame region where there is no possibility of distorting or otherwise interfering with the main video image with the signature.

Regarding claims 38 and 48, Copriviza and Echeita disclose the system and method of claims 30 and 40, wherein the program source combines the digital video program and the meta-stream into a program stream to be distributed to the play-out device (Echeita, col. 5, lines 4-14).



Regarding claims 39 and 49, Copriviza and Echeita disclose the system and method of claims 30 and 40, wherein the play-out device is a computer (Copriviza, fig. 1, field receiver 36).

Claims 33, 34, 43, and 44 rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza and Echeita as applied to claims 30 and 40 above, and further in view of Iggulden (6,597,405).

Regarding claims 33, 34, 43, and 44, Copriviza and Echeita disclose the system and method of claims 30 and 40, wherein the program source encodes each frame of the digital video program with a first unique signature (Copriviza, col. 8, lines 16-39), but fail to disclose using a hashing algorithm for the signatures.

In an analogous art, Iggulden teaches using hashing algorithms to produce signatures for video frames, allowing the material to be quickly identified in real time (col. 5, lines 25-36).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system and method of Copriviza and Echeita to use a hashing algorithm for signature generation, as taught by Iggulden, for the benefit of fast identification of video frames.

**(10) Response to Argument**

Echeita fails to disclose generating a second unique signature for each frame of a digital video program being played out and comparing the

second unique signature generated for each frame with a corresponding  
first unique signature encoded with the frame.

First, appellant argues that Echeita does not disclose including information in the advertisement reconciliation packets that identifies individual frames, as the disclosure only goes so far as to identify the commercial as a whole (the spot number, appeal brief, pages 7 and 8), thus the second unique signature disclosed by Echeita is not generated for each frame, only for the entire commercial (and also, by default, cannot teach a matching engine which performs frame by frame comparisons of signatures).

In response, as stated by the examiner in the office action mailed on May 15, 2007, the uniqueness of the signatures to pertain to individual frames is established by Copriviza (col. 8, lines 16-39), the primary reference. When Copriviza is modified in view of Echieta, those signatures which allow a system to align the advertisement reconciliation data with a corresponding advertisement, as taught by Echeita (col. 7, lines 37-43), are frame specific, as taught by Copriviza. It is the teaching found in Echeita regarding the desirability of frame counting (Echeita, col. 8, lines 34-40) for quality of service measurements that provides the nexus which links Echeita to Copriviza. Further, the matching engine which performs comparison and matching to determine if a commercial is properly received is disclosed as taking place at the play out device (Echeita,

microcontroller 58 of video processor unit 36, shown in fig. 2, col. 10, lines 48-59).

Second, appellant argues that Echeita's "identifying overhead information" does not correspond to the second signature generated for each frame, because the identifying overhead information is used by a transmission station to align commercials with reconciliation data, and not by the play out device (appeal brief, page 8).

In response, as stated by the examiner in the advisory action mailed on July 23, 2007, the microcontroller 58 (the play out device) also uses the same identifying overhead information to note the that advertisement reconciliation data packets are "packets of interest" along with the commercial itself (Echeita, col. 7, lines 43-53). Thus, according to Echeita, as a commercial is being received at the play out device (via demultiplexer 62), information which uniquely identifies the commercial is also used to identify and extract the advertisement reconciliation data packets, which corresponds to the generation of first and second unique signatures and their subsequent comparison. Further, as stated above, when these teachings found in Echeita are applied to the Copriviza disclosure, these are signatures that are unique to each frame, in the interest of making sure that each frame is properly displayed by the play out device.

The Examiner has failed to establish a *prima facie* case of obviousness.

Here, appellant reiterates that the combination of Copriviza and Echeita fail to establish a *prima facie* case of obviousness because appellant alleges that the combination fails to teach a signature engine for generating a second unique signature for each frame of the digital video program being played out; and a matching engine to compare the second unique signature generated for each frame with a corresponding first unique signature encoded with the frame, as recited in claim 30 (appeal brief, page 9).

In response, as stated above, the signature engine that generates a second signature is found in the microprocessor 58 taught by Echeita, which extracts signature information from the advertisement reconciliation data packets in order to match them with a received commercial, and the matching engine is also disclosed in the same microprocessor, which is disclosed by Echeita as performing the comparison and matching process for determining if a commercial is properly received and displayed. Further, it is the combination of Copriviza and Echeita which establishes that the signatures in question uniquely identify individual frames. This is an example of combining prior art elements according to known methods to yield predictable results, as each element claimed is found in the prior art, the combination merely results in a higher level of granularity for determining play-out statistics regarding received content, with each element still performing the function of identifying and tracking content as when implemented separately, and the result of the combination is precisely what a person of ordinary skill in the art would expect it to be, namely a system which associates

received advertisement reconciliation data with an advertisement, and identifies whether or not all frames were properly received and displayed.

Claims 33-34 and 43-44.

Here, appellant simply refers back to the independent claims, noting simply that Iggulden fails to disclose what Copriviza and Echeita are argued to similarly lack.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Dominic D Saltarelli/

Examiner, Art Unit 2623

Conferees:

/John W. Miller/

Supervisory Patent Examiner, Art Unit 2623

/Chris Kelley/

Supervisory Patent Examiner, Art Unit 2623